the opinion of the latter was therefore based on false premises. A majority of the medical experts, Dr. Sachs thought, were perfectly honest, but the lawyers were often bent on deceiving them for their own selfish purposes. In many instances, instead of trying to ascertain the truth, as is done in the courts abroad, an effort is made to keep as much of the truth as possible from the jury.

Dr. H. C. van den Burgh said that as a member of both the medical and the legal profession he could say for the latter that they were always prepared to meet the medical profession half way and more when a tangible proposition upon this subject was presented in a candid and straightforward manner by a representative body of medical men, such as this society. As to the constitutional features of the subject that had been touched upon in the discussion, he wished to say that the medical expert who was testifying for the people in an unprejudiced and truthful manner at the same time represented the defendant, who was one of the people. Medical experts of that class always commanded the respect of the legal profession, and with them they were always ready to work in harmony.

Dr. Jacoby, in closing, said he had tried to present this subject as dispassionately as he could. Even with the inadequate laws that now governed this feature of our legal procedure he thought it was possible to adjust our method of giving medical expert testimony so that it would be on a par with that of other countries, first, by giving the general practitioner a better knowledge of psychiatry, and, second, by establishing a special class of experts. It would perhaps take a quarter of a century to do this, but a beginning had to be made some time.

THE PHILADELPHIA NEUROLOGICAL SOCIETY

February 24, 1908

The President, Dr. J. W. McConnell, in the Chair

A CASE OF PARALYSIS OF ASSOCIATED UPWARD MOVEMENT WITH PRESERVATION OF ISOLATED UPWARD MOVEMENT OF EYEBALLS

By Alfred Reginald Allen, M.D.

Dr. Allen's case was that of a white, Irish-born male about forty-five years of age who had had a chancre some years before. He presented the following points in ophthalmological examination:

He had fair vision in each eye but fixed naturally with left, the right eye swinging out. When the right eye is covered and the patient is told to fix a test object with left eye he does so and is able to follow the test object with the left eye in all directions. When the left eye is covered and the patient is told to fix with the right eye and then follow the test object to the right or left he is unable to do so unless he concentrates his attention on the left eye which is covered and makes that go to the left or right as the case may be. In this case the right eye turns inward or outward in its corresponding coordinate manner.

If he fix with his left eye and test object be moved upward the left eye follows the object upward to the normal limit of superior excursion in a normal manner. The right eye during the test is only slightly elevated and is at the same time turned and rotated outward, showing the pure action of the inferior oblique minus the superior rectus. In case the right eye fix and follow the test object upward the behavior of the left eye is precisely that of the right eye under the same circumstances, *i. e.*, pure action of inferior oblique minus the action of the superior rectus; while the right eye is elevated in a normal and orderly manner. The pupils react freely and equally to light.

In the test where the patient's left eye is covered and we try to get him to follow the test object inward with the right eye, concentrating altogether on the right eye, he fails but when the test object is well past the line of central fixation on nasal side the patient is able to detect movement of object thereby showing that there is a normal stimulation of the retina to the temporal side of his macula. Therefore it cannot be said that he fails to follow the object because he does not know where the object is.

The explanation of this case is that the upper motor neurones from the left cortex to that part of the right oculomotor nucleus which presides over the innervation of the right internal rectus are interrupted, and the only way that the right internal rectus is brought into play is by an impulse traveling down from the right motor cortex to the left abducens nucleus and from here an impulse passing upward on the posterior longitudinal bundle to that part of the right oculomotor nucleus which innervates the internal rectus. This explains why he must concentrate his attention on his left eye which is covered in order to move his right eye inward.

As to the explanation of the difficulty in associated upward movement it must be remembered that the inferior oblique and superior rectus cell groups of one side are intimately connected by means of an association commissure and by this means do we get associated upward movements. There is, therefore, a break in this association tract and whereas each eye can do its work alone when fixing there is no associated upward movement. Where this association commissure or tract is situated is not definitely known. It may be directly across the raphe by the shortest cut between the two parts of the oculomotor nucleus or again (and this is not improbable) a set of axones may take origin in the inferior oblique and superior rectus portions of the oculomotor nucleus of the right side and pass to the nucleus of Darkschewitsch of the same side, then on the posterior commissure to the nucleus of Darkschewitsch of the left side and from there to the corresponding cell groups of the oculomotor nucleus of the left side. When the relationship between the posterior longitudinal bundle and the nuclei of Darkschewitsch and posterior commissure are remembered such an explanation seems quite plausible.

The nucleus of Darkschewitsch is very likely in no sense a part of the oculomotor nucleus.

Dr. W. G. Spiller referred to two cases of this character, one was reported by Dr. Krall before the Philadelphia Neurological Society, the other was von Monakow's case in which a tumor growing into the nuclei of the oculomotor nerves produced this symptom complex—paralysis of upward associated movement with preservation of the upward movement of each eyeball separately. Dr. Spiller thought the explanation given by Dr. Allen was a proper one.

Dr. T. A. Williams thought it very important not to overlook the psychic factor in the fixation with one eye in front. The man may not be really making an effort to look at an object and fix it when he does not follow with one eye, but when he really makes an effort he can't help following the object with both eyes. If that is not the case Dr. Williams said he was quite prepared to stand corrected on the case. He said he did not pretend that that was any more than a mere suggestion. If that is not the case, might there not be another factor in the situation, namely, the particular focusing of the lesion upon that portion of the third nucleus which subserves the function of the internal rotation of the right eye, and conservation of that portion of the sixth nucleus which presides over the internal rotation of the right eye; that is to say that the left sixth nucleus is not attacked, nor are any of its tracts involved so that when an effort at bilateral deviation of both eyes is made it may be accomplished through intervention of that part of the left sixth nucleus which sends fibers to the right internal rectus, thus conserving what Grasset calls the "levo-gyratory" function. The automatic levo-gyratory function might in this way derive its mechanism from the nuclei of the third nerve in the floor of the third ventricle.

Dr. T. H. Weisenburg said that the man presented by Dr. Allen came to his clinic at the Medico-Chirurgical Hospital and that with Dr. Ingham he studied the patient a number of times and thought the condition was purely one of muscular disease and did not regard it as a case of associated paralysis at that time, and that he would be surprised to learn that the patient had developed paralysis of upward movement in the space of two to three weeks, that representing about the time elapsed. Dr. Weisenburg stated further, that in examining the patient at the present time he did not seem to have changed very much and he hardly believed it to be a case of paralysis of upward movement and he still regarded it as a case of involvement of the ocular muscles. Dr. Weisenburg referred to another case under his care, that of a young women, about twenty-eight years of age, who has been seeing double all her life.

Dr. Allen in closing, alluded to Dr. Spiller's statements in reference to the nucleus of Darkschewitsch, saying that he was aware that at one time it was thought to be part of the oculomotor nucleus, but now the idea is that it has more to do as the end station, or one of the end stations of the posterior longitudinal bundle, at the same time being the starting point of a large part, if not all, of the posterior commissure. Now there are very likely fibers running from the oculo-motor nucleus to the nucleus of Darkschewitsch. He said he knew that there was no proof that the decussation between the two oculomotor nuclei takes place by means of the posterior commissure, but he mentioned it simply as a very possible way of communication and one thoroughly in keeping with communications which take place all the way from the twelfth nucleus up to the third nucleus by means of the posterior longitudinal bundle, but he was very careful not to state that dogmatically. As far as the sixth nucleus on the left side being in perfect contact with that part of the right oculomotor nucleus, having to do with the rectus internus of the right side, as Dr. Williams has called attention to, that, of course, goes without saying. That is the only possible way the man has for internal rotation of the right eye.

Apropos of what Dr. Weisenburg said, also apropos of what Dr. Lloyd had called attention to, Dr. Allen said there is some swinging up of the covered eye when upward rotation is tested, but no more swinging up than could be caused by a rather fair action of the inferior oblique. And if you measure the orbits carefully and note the base of the cornea in each eye you will find that the eye which does not fix in upward rotation is on a very perceptibly lower plane than the eye which does fix. In other words, there is lack in that eye of superior rectus action. If it were muscular he could not look up with either singly.

A CASE OF APHASIA

By W. B. Cadwalader, M.D.

Right-handed man, sixty years of age, presented himself for treatment with a history of an apoplectic attack four years previously.

On examination it was found that there was weakness of the right side of the body with slight impairment of sensation of the right upper limb. When objects were placed in his right hand he could recognize them, but more slowly than when placed in his left. This was hardly a true astereognosis. There was very slight ataxia of the right side. The pupils were equal and reacted to light and accommodation. The ocular movements were normal, and there was no evidence of palsy of the extra-ocular muscles.

The eye examination showed 3/6 vision in the left eye, and 2/6 vision in the right eye. There was a slight neuroretinitis but no hemianopsia. On test made with printed and written words and sentences he could not read when made to rely upon vision alone. If allowed to spell out each word letter by letter he could read some of the shorter and easy words slowly and laboriously. When prevented from doing this he could not read except an occasional short easy word. On asking him not to attempt any longer to read the words but to read the letters only, he read them off with apparent fluency, but constantly calling an "a" an "e" and *vice versa.* Sometimes mistakes were made in other letters but this was not constant. His difficulties in reading words and letters were precisely the same with the largest and smallest types. On testing him with figures he could read them rapidly and fluently, not only the individual figures but when combined in groups. He could not write at all, although his weakness did not seem sufficient to explain this. There was slight motor aphasia, sometimes misplacing words, but on the whole this was not marked. There was no apraxia.

His mental condition was apparently good, understanding and appreciating everything that was said to him, and in general his psychic functions were normal.

His family said that he had always been a man of good habits and of moderate education and previously had been able to read and write fluently.

Dr. Calwalader regarded this case as one of partial letter blindness and nearly complete word blindness.

Dr. Charles K. Mills said that the case was particularly interesting in the discussion of word blindness. It would seem to be corroborative of the views of those who believe in the extreme differentiation of centers in various portions of the zone of speech in the cerebrum as against the views of those who contend so strongly for the opposite. This man, he thought, was nearly monoaphasic. He noticed that the patient used practically all parts of speech in the few sentences that he employed. He was evidently not word deaf. He was able to recognize objects quite well but could not recognize words except to a very limited extent. Letters he recognized except one or two. Dr. Mills said he could hardly conceive an explanation